

Amendments to the Claims

1. (Currently amended) A body fluid diagnostic device comprising:
 - a. a handle;
 - b. a test head attached to the handle, said test head having a test channel which is positioned in a recess in a surface of the test head and said test channel being comprising of a base and opposing upper and lower channel walls which extend from the base and are spaced apart from each other for forming a test channel opening and said test channel being capable of retaining a test sample of body fluid by capillary force;
 - c. sensing means in communication with the test channel for providing an output sensing signal representative of the tested properties of body fluid collected in said test channel;
 - d. [[signal processing means]] a microprocessor for converting the output sensing signal to readable or storable information, said signal processing means having an input means for receiving the output sensing signal and an output means for producing a signal for information display or storage; [[and]]
 - e. a power source attached to said handle for energizing the sensing means and the [[signal processing means.]] microprocessor;
 - f. two cartridges storing functional fluids; and
 - g. a dispensing means including two elastic buttons and an a disk actuator, said disk actuator contacting the elastic buttons selectively for dispensing at least one functional fluid.
2. (Canceled)
3. (Canceled)
4. (Canceled)
5. (Canceled)
6. (Canceled)

7. (Canceled)

[[8.]] (Currently Amended) 2. The body fluid diagnostic device of claim [[6]] 1 wherein said dispensing means includes an elastic membrane valve, said elastic membrane valve having flexible valve segments separated by cross-cut slits with slit clearance sufficiently small for liquid-proof sealing of the dispensing opening when said elastic membrane valve being in the closed position.

9. (Canceled)

10. (Canceled)

[[11.]] (Currently Amended) 3. The body fluid diagnostic device of claim 1 wherein:

- a. the sensing means is comprised of a renewable biosensor system which includes at least one reusable electrode system having a plurality of electrodes and counter electrodes, said electrode system being positioned on at least one wall of the test channel; and
- b. the test channel has an opening in one wall of said test channel for the inlet flow of a controlled quantity of reagent into the test channel for forming a mixture with body fluid, said mixture being removable from the electrode system and from the test channel by a treatment liquid.

13. (Canceled)

[[14.]] (Currently Amended) 4. The body fluid diagnostic device of claim 1 including a channel cover for the test channel opening and said channel cover being slidable to its closed and open positions.

[[15.]] (Currently Amended) 5. The body fluid diagnostic device of claim 1 including a driving means for imparting a vibrating motion to the test head.

[[16.]] (Currently Amended) 6. The body fluid diagnostic device of claim 4 wherein the channel cover comprises:

- a. a saddle-shaped base with an opening which coincides with the channel opening when the channel cover is in an open position; and

b. guide ribs on the underside of the saddle-shaped base for engaging with slots in the edge surface of the test head and for guiding the sliding movement of the channel cover to its open and closed positions when said guide ribs are engaged in said slots.

[[17.]] (Currently Amended) 7. The body fluid diagnostic device of claim 6 wherein the movement of the channel cover is actuated by a solenoid contained in the handle.

[[18.]] (Currently Amended) 8. The body fluid diagnostic device of claim 4 wherein the movement of the channel cover is in response to the dispensing action of a reagent from a [[reservoir]] cartridge into the test channel.

19. (Canceled)

20. (Canceled)

21. (Canceled)

[[22.]] (Currently Amended) 9. A handheld diagnostic device comprising:

- a. a handle;
- b. a test head having a sensing surface and a reflective fiber optical sensor positioned on the sensing surface, said test head being attached to the handle;
- c. a test channel formed by a gap between a detachable channel wall and the sensing surface of said test head, said detachable channel wall having a reflective surface opposing to said sensing surface for reflecting the light beam emitting from the fiber optical sensor, and said test channel being capable of collecting and retaining a fluid sample by capillary force;
- d. a signal processing means for converting the output sensing signal of the fiber optical sensor as representative of the tested properties of the fluid sample to readable or storable information, said signal processing means having an input means for receiving the output sensing signal and an output means for producing a signal for information display or storage; and

e. a power source attached to said handle for energizing the sensing means and the signal processing means.

[[23.]] (Currently Amended) 10. A handheld diagnostic device comprising:

a. a handle;

b. a test head attached to the handle having a sensing surface and an electrode system, said electrode system having a plurality of electrodes and opposing counter electrodes positioned on said sensing surface and being spaced apart for forming a gap comprising a test channel between opposing measuring surfaces of said electrodes and counter electrodes whose other non-measuring surfaces being covered with insulating layer, and said test channel being capable of collecting and retaining a test sample by capillary force;

c. a signal processing means for converting the output sensing signal of the electrode system as representative of the tested properties of the fluid sample to readable or storable information, said signal processing means having an input means for receiving the output sensing signal and an output means for producing a signal for information display or storage; and

d. a power source attached to said handle for energizing the sensing means and the signal processing means.

Complete Listing of All Claims in the Application

1. A body fluid diagnostic device comprising:
 - a. a handle;
 - b. a test head attached to the handle, said test head having a test channel which is positioned in a recess in a surface of the test head and said test channel being comprising of a base and opposing upper and lower channel walls which extend from the base and are spaced apart from each other for forming a test channel opening and said test channel being capable of retaining a test sample of body fluid by capillary force;
 - c. sensing means in communication with the test channel for providing an output sensing signal representative of the tested properties of body fluid collected in said test channel;
 - d. a microprocessor for converting the output sensing signal to readable or storable information, said signal processing means having an input means for receiving the output sensing signal and an output means for producing a signal for information display or storage;
 - e. a power source attached to said handle for energizing the sensing means and the microprocessor;
 - f. two cartridges storing functional fluids; and
 - g. a dispensing means including two elastic buttons and an a disk actuator, said disk actuator contacting the elastic buttons selectively for dispensing at least one functional fluid.
2. The body fluid diagnostic device of claim 1 wherein said dispensing means includes an elastic membrane valve, said elastic membrane valve having flexible valve segments separated by cross-cut slits with slit clearance sufficiently small for liquid-proof sealing of the dispensing opening when said elastic membrane valve being in the closed position.
3. The body fluid diagnostic device of claim 1 wherein:

- b. the test channel has an opening in one wall of said test channel for the inlet flow of a controlled quantity of reagent into the test channel for forming a mixture with body fluid, said mixture being removable from the electrode system and from the test channel by a treatment liquid.
- 4. The body fluid diagnostic device of claim 1 including a channel cover for the test channel opening and said channel cover being slidable to its closed and open positions.
- 5. The body fluid diagnostic device of claim 1 including a driving means for imparting a vibrating motion to the test head.
- 6. The body fluid diagnostic device of claim 4 wherein the channel cover comprises:
 - a. a saddle-shaped base with an opening which coincides with the channel opening when the channel cover is in an open position; and
 - b. guide ribs on the underside of the saddle-shaped base for engaging with slots in the edge surface of the test head and for guiding the sliding movement of the channel cover to its open and closed positions when said guide ribs are engaged in said slots.
- 7. The body fluid diagnostic device of claim 6 wherein the movement of the channel cover is actuated by a solenoid contained in the handle.
- 8. The body fluid diagnostic device of claim 4 wherein the movement of the channel cover is in response to the dispensing action of a reagent from a cartridge into the test channel.
- 9. A handheld diagnostic device comprising:
 - a. a handle;
 - b. a test head having a sensing surface and a reflective fiber optical sensor positioned on the sensing surface, said test head being attached to the handle;
 - c. a test channel formed by a gap between a detachable channel wall and the sensing surface of said test head, said detachable channel wall having a reflective surface opposing to said sensing

surface for reflecting the light beam emitting from the fiber optical sensor, and said test channel being capable of collecting and retaining a fluid sample by capillary force;

d. a signal processing means for converting the output sensing signal of the fiber optical sensor as representative of the tested properties of the fluid sample to readable or storable information, said signal processing means having an input means for receiving the output sensing signal and an output means for producing a signal for information display or storage; and

e. a power source attached to said handle for energizing the sensing means and the signal processing means.

10. A handheld diagnostic device comprising:

a. a handle;

b. a test head attached to the handle having a sensing surface and an electrode system, said electrode system having a plurality of electrodes and opposing counter electrodes positioned on said sensing surface and being spaced apart for forming a gap comprising a test channel between opposing measuring surfaces of said electrodes and counter electrodes whose other non-measuring surfaces being covered with insulating layer, and said test channel being capable of collecting and retaining a test sample by capillary force;

c. a signal processing means for converting the output sensing signal of the electrode system as representative of the tested properties of the fluid sample to readable or storable information, said signal processing means having an input means for receiving the output sensing signal and an output means for producing a signal for information display or storage; and

d. a power source attached to said handle for energizing the sensing means and the signal processing means.